

58-25 Synopsis of Automatic X-ray Processors (Project 98-38) (9/99)

There are many advantages to using automatic X-ray processors during dental treatment. Some of these include reduced processing time, consistent film quality, and the elimination of wet film reading. Also, automatic processors use compact equipment that takes up less floor and/or counter space than dip-tank equipment does. Automatic film processors come in two basic styles: small tabletop units that process intraoral films only, and larger roller/belt transport models capable of processing occlusal, panoramic, and cephalometric films. The number and type of radiographs to be processed should determine the style of processor to be purchased.

The basic mechanism in an automatic processor consists of a series of rollers or belts that transport the film through various sections containing developer solution, fixer solution, and wash water. The film then goes through a dryer section. The chemicals used in automatic processing are specially designed to be used with these machines. They operate at higher temperatures and do not require film rinsing between the developer and fixer. Solution brands should not be substituted or changed unless recommended by the manufacturer of the automatic processor.

Automatic film processors can vary by the way in which they are plumbed. Some automatic processors are connected to the standard plumbing system, while other units operate without plumbing. An important part of obtaining high-quality films with these processors is ensuring that the developer and fixer solutions are replenished as necessary. Many units have automatic replenishing systems that deliver fresh developer and fixer as films are processed. Keep in mind that silver recovery is mandatory for all units because of environmental concerns about silver being discharged into the wastewater stream.

The majority of problems with radiographs are due to improper film processing. To a great degree, these problems can be prevented by properly maintaining the processing unit and the chemicals it contains. For example, the main cause of automatic processing problems is failure to keep the rollers or transport module clean. It is essential that automatic processors be cleaned regularly and that preventive maintenance procedures be followed. Most processors require that the rollers or transport module be disassembled periodically and cleaned to prevent processing artifacts on radiographs and the loss of films during transport. Regular lubrication is required for the motor that drives the rollers using gears or chains to avoid machine breakdown as well. All automatic processors must be maintained on a strict basis exactly as recommended by the manufacturer.

This synopsis consists of a table ([Attachment 1](#)) which is a list of selected automatic X-ray processors, their manufacturers, and basic features. Factors to consider before purchasing include: cost, maintenance, countertop space required, plumbing connections, and the availability of a daylight loader (ie, a compartment in which films can be unwrapped and fed into the machine without working in a darkroom).

Synopsis of Automatic X-Ray Processors (page 1 of 3)

Model	Velopax - Extra X	Velopex - Lynx	Velopex Intra-X
Manufacturer	Medivance Instruments Ltd		
Technical Services	Brian Rough 136 Main St Catawissa PA 17820		
Phones	(888) 700-2312 (570) 356-2614 (570) 356-2613 FAX		
Government Representative	Tony Urella		
Marketing Information	136 Main St Catawissa PA 17820		
Phones	(888) 835-6739 (570) 356-2614 (570) 356-2613 FAX		
Cost: Retail	\$5,850.00	\$5,850.00	\$2,295.00
Government	\$2,632.50	\$2,632.50	\$1,147.50
Procurement Information	N/A	N/A	N/A
FDA	Exempt	Exempt	Exempt
Electrical approval	UL, ETL, CSA, CE, ISO 9000	UL, ETL, CSA, CE, ISO 9000	UL, ETL, CSA, CE, ISO 9000
ADA	None	None	None
Electrical rating	110V, 12 amp	110V, 12 amp	110V, 8 amp
Electrical requirements	Preferably isolated, 15 amp circuit	Preferably isolated, 15 amp circuit	Preferably isolated, 15 amp circuit
Additional voltages	60 cycle/110V 50 cycle/220V 60 cycle/220V	60 cycle/110V 50 cycle/220V 60 cycle/220V	60 cycle/110V 50 cycle/220V 60 cycle 220V
Plumbing requirements	Machine is ready to be connected to cold water supply and should have a standing waste line. There is an optional (no plumbing) water supply kit available \$210.00 (gov't)	Machine is ready to be connected to cold water supply and should have a standing waste line. There is an optional (no plumbing) water supply kit available \$210.00 (gov't)	No
Recirculate			
Fixer	Yes	Yes	No
Developer	Yes	Yes	No
Wash water	Yes	Yes	No
Endo Mode/time	Yes/2 min archival	None	Yes/2 min archival
Processing time/adjustable	4 min dry to dry/No	2 min dry to dry/No	4 min dry to dry/No
Film processed	Intra-oral and Extra-oral	Panoramic and Cephalometric	Intra-oral and Occlusal
Daylight loader/cost	Yes/\$300.00 (gov't)	Yes/\$300.00 (gov't)	Yes/\$106.20 (gov't)
Requires specific Developer/fixer	None	None	No
Separate drain	Yes - may be used in closed-loop system	Yes	No
Heater	Fixer & developer	Fixer & developer	Fixer & developer
Dimensions	12.5" X 19.75" X 15" (26" w/ loader)	12.5" X 19.75" X 15" (26" w/ loader)	11.75" X 11" X 14.75" (21.75" w/ loader)
Weight	40 lbs/66 lbs with chemicals	40 lbs/66 lbs with chemicals	16.5 lbs/26.5 lbs with chemicals
Warranties	1 Year, 2 Years/Module	1 Year, 2 Years/Module	1 Year, 2 Years/Module
Training Aids			

Synopsis of Automatic X-Ray Processors (page 2 of 3)

Model	Velopex Intra-XE	Velopex - Sprint	810 Basic	Excel	GXP (110-0096 G3/G4)
Manufacturer	Medivance Instruments Ltd		Dent-X		Gendex
Technical Services	Brian Rough 136 Main St Catawissa PA 17820		Donald Hill 250 Clearbrook Rd Elmsford NY 10523		901 W Oakton St Des Plaines IL 60018
Phones	888-700-2312 570-356-2614 Fax 570-356-2613		914-592-6100 Fax 914-592-6148		800-769-2909 847-640-4800 Fax 847-640-5310
Gov't Rep	Tony Urella		Raffi Frank		Linda Allen
Marketing Information	136 Main St Catawissa PA 17820		250 Clearbrook Rd Elmsford NY 10523		901 W Oakton St Des Plaines IL 60018
Phones	888-835-6739 570-356-2614 Fax 570-356-2613		914-592-6100 Fax 914-592-6148		800-800-2888 Fax 847-640-4891
Cost: retail	\$1,995.00	\$1,795.00	\$5,665.00	\$6,300.00	\$6035.00
govt	\$997.50	\$897.00	37% discount	37% discount	\$2647.00
Procurement Information	N/A	N/A	VA Contract #V797P-3572-K DSCP Stock # 9992405000	VA Contract #V797P-3572-K DSCP Stock # 9992407000	VA Contract #V797P-3682K Stock # A0400/A0400S
FDA	N/A	Exempt	510 K – PMA	510K	501 K - K932675 July 26, 1993 PMA - July 7, 1993
Electrical approval	UL, ETL, CSA, CE, ISO 9002	UL, ETL, CSA, CE, ISO 9000	UL, ETL, CSA, CE, ISO 9001	UL, ETL, CSA, CE, ISO 9001	UL CSA, IEC, CA 219A
ADA	None	None	Acceptance	Acceptance	
Electrical rating	110V, 8 amp	110V, 5 amp	110V		115V, 15 amp
Electrical requirements	Preferably isolated, 15 amp circuit	Preferably isolated 15 amp circuit			
Additional voltages	60 cycle/110V 50 cycle/220V 60 cycle 220V	60 cycle/110V 50 cycle/220V 60 cycle 220V	50 cycle/110V 50 cycle/220V 50 cycle/100 V 60 cycle/110V	50 cycle/110V 50 cycle/220V 50 cycle/100V 60 cycle/110V	50 cycle/220V
Plumbing requirements	No	None			Self contained
Recirculate			Built in chemical agitations	Built in chemical agitations	
Fixer	No	No			Yes
Developer	No	No			Yes
Wash water	No	No	Yes (can be closed loop)		Yes
Endo Mode/time	No/2.75 min archival	No	Yes/2 min	Yes/2 min	Yes/2 min
Processing time/adjustable	5.5 min dry to dry/No	2 min wet to wet archival/No	4.5 & 6 min/Yes	4.5 & 6 min/Yes	5 min/No
Film processed	Intra-oral and Occlusal	Intra-oral and Occlusal	All film sizes from 0 through 8 X 10 inch	All film sizes from 0 through 8 X 10 inch	0, 1, 2, 3, 4, Panoramic, Ceph 8 X 10
Daylight loader/cost	Yes/\$106.20 (govt)	Yes/included	Yes (option)/\$318.15 (govt)	Yes (option)/\$318.15 (govt)	Yes
Requires specific Developer/fixer	No	No	No	No	No
Separate drain	No	No	Yes	Yes	Yes
Heater	Fixer & developer	Fixer & developer	Fixer & developer	Fixer & developer	Developer
Dimensions	11 3/4" X 11" X 14 3/4" (21 3/4" w/ loader)	16 3/4" X 7 7/8" X 11"	14 1/2" X 17 1/2" X 30 1/2"	14 1/2" X 17 1/2" X 30 1/2"	16" X 17" X 28"
Weight	16.5 lbs/26.5 lbs with chemicals	15 lbs/ 22.5 with chemicals	80 lbs	80 lbs	70 lbs
Warranties	1 Year	1 Year	1 Year	1 Year	2 Years
Training Aids					

Synopsis of Automatic X-Ray Processors (page 3 of 3)

Model	A/T 2000 XR	Peri-Pro #9000	Peri-Pro III #94000
Manufacturer	Air Techniques Inc		
Technical Services	70 Cantiague Rock Road, Hicksville NY 11802-1163		
Phones	800-247-8324 516-433-7676 Fax 516-433-7684		
Gov't Rep	Eugene Heil		
Marketing Information	PSA Government Sales 345 Market Place, Suite 103 Roswell GA 30075		
Phones	770-552-7664 Fax 770-552-8557		
Cost: retail	\$6,295.00	\$2,095.00	\$2,295.00
govt	\$3,299.77	\$925.99	\$1,052.62
Procurement Information	VA Contract V797P-3679K (12/1/98-11/30/03)	VA Contract V797P-3012K	VA Contract V797P-3012K
FDA	None required, grandfathered	Yes, grandfathered	Yes, grandfathered
Electrical approval	UL	UL	UL
ADA	None	None	None
Electrical rating	115V, 60 Hz, 8 amps	115V, 5 amps	115V, 5 amps
Electrical requirements	115V dedicated 15 amp line recommended	115V, 5 amps	115V, 5 amps
Additional voltages	50 cycle/110V 60 cycle/110V 50 cycle/220V	N/A	N/A
Plumbing requirements	Water pressure 30 - 80 psi Flow ½ gal/min when processing Water temp 55 - 80 F Drain PVC construction	None required	None required
Recirculate			
Fixer	No	No	No
Developer	No	No	No
Wash water	Yes, with optional system	No	No
Endo Mode/time	Yes/2.5 min	No	No
Processing time/adjustable	5.5 min / No	7.5 min	5 min
Film processed	All dental film sizes panoramic, cephalometric, TMJ; occlusal, perapical	#0, #1, #2, #3, #4 sizes	#0, #1, #2, #3, #4 sizes
Daylight loader/cost	Yes/\$476.72 (govt)	Yes (\$118.72)	Yes (\$118.72)
Requires specific Developer/fixer	No	Yes Air Techniques Peri-Pro Chemistry	Yes Air Techniques Peri-Pro Chemistry
Separate drain	Yes	No	No
Heater	Fixer & developer	No	Fixer & developer
Dimensions	18" X 15" X 25"	8 ½" X 10" X 25"	8 ½" X 10" X 25"
Weight	90 lbs	20 lbs	22 lbs
Warranties	1 Year, 2 Years/Modules	1 Year	1 Year
Training Aids	Video incl. with each processor		